

Remarks

Claim 1 has been amended to delete “automatically” before “detecting deviations” in the preamble. Since it is not applicants’ intention that this word import any limitation not already present in the claim, they have simply deleted the word to eliminate any confusion on this point.

Claim 1 has also been amended (along with claims 3 and 18) to replace the term “multitude” with “plurality”, which is the usual term used in patent claims to refer to two or more items. No substantive change is intended by this amendment.

Claim 1 has also been amended to recite that the leaf record set comprises a subset of “said records” (of the data table) for which the indicated class predicate evaluates to TRUE. In this case as well, no substantive change is intended.

Claim 3 has been amended to recite that the determining step is performed for “each of” the plurality of leaf nodes to agree with Fig. 3, which shows this step being performed as step 305 for each leaf node that passes the purity test of step 304.

Claim Objections

Claims 3-8 stand objected to on account of the fact that claim 3 ends with a comma. Applicants have amended claim 3 so that it properly ends with a period.

Claim Rejections—35 U.S.C. § 112

1. 35 U.S.C. § 112, First Paragraph

Claims 1-20 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement of that paragraph (paper no. 5, page 2). Specifically, the Examiner alleges that the recitations in claim 1 of “automatically detecting deviations” and “calculating a

classification tree” are not described in the specification “in such a way as to enable one skilled in the art to make or use the invention”. Applicants respectfully traverse this rejection.

With regard to the preamble recitation of “automatically detecting deviations” (now merely “detecting deviations”), this is not a positive step but rather a statement of the general purpose of the invention, such as one would normally find in a claim preamble. That purpose is accomplished by the positively recited steps (1)-(3),¹ support for which is the proper concern of § 112, first paragraph. The end result of these three steps is the “deviation set” recited in step (3), which neatly relates back to the originally stated purpose of detecting deviations in a data table.

With regard to the recitation in step (2) of “calculating a classification tree”, this is a conventional step, as the specification expressly notes at page 7, lines 4-7, and as is evident from its description in such references as U.S. Patent 5,899,992, which issued in 1999 and is submitted herewith. This is just one example, of course. Even a cursory perusal of Google or other search databases will assure the Examiner of the existence of numerous other teachings of similar content. Applicants do not just rely on the conventional nature of generating classification trees, however. Beginning at page 11, line 10, and continuing onto page 12, where the function **compute_classification_tree(DT, IF, CF)** is described, they expressly set forth an algorithm for generating such trees. Moreover, the algorithm is a deterministic one that can readily be performed by a machine. Thus, even assuming that the specification would need to teach such a conventional technique as generating a classification tree, it actually provides such a teaching and thus fully complies with the first paragraph of § 112.

2. 35 U.S.C. § 112, Second Paragraph

Claims 10-20 also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite (paper no. 5, page 3).

¹ If the Examiner’s concern here is whether the recited steps suffice to “automatically” detect such deviations, applicants have deleted this word from the preamble, so that claim 1 is directed merely to a method for “detecting deviations”.

The Examiner first argues that the phrase “automatically detecting deviations” is indefinite since “[i]t is not clear how the detecting deviations step is automatic when the classification tree is associated with predicates”. If the Examiner is saying here that associating a predicate with an edge of the tree necessarily cannot be done automatically, he is simply wrong, since the tree generation procedure described on page 12 describes just such a step of finding a predicate at lines 14-15. In any event, since applicants have deleted the word “automatically” from the preamble, this issue simply goes away.

The Examiner also argues that the phrase “calculating a classification tree” is indefinite since “[i]t is not clear how/what calculation takes place.” Applicants respectfully disagree. While claim 1 does not specify just how a classification tree is constructed, that is the purpose of the specification rather than the claim. The Examiner’s statement thus goes to the breadth of the claim rather than its definiteness. The Examiner does not assert, nor can he plausibly assert, that one skilled in the art would be in doubt as to whether he were practicing this step. Accordingly, this step of claim 1 is definite.

Finally, the Examiner argues that the phrases “leaf record set” and “subset of records” are indefinite in that they “are not clearly defined”. Again, applicants respectfully disagree. Claim 1 as amended defines the “leaf record set” of a leaf node as that subset of data table records (“said records”) for which a class predicate comprising all predicates along a path from a root node to the leaf node evaluates to TRUE. An example using leaf node 203 (Fig. 2) will make this clear. The predicates along the path from the root node 201 to the leaf node 203 are

NOT (age < 30),

associated with the edge between root node and interior node 205, and

(income = high),

associated with the edge between interior node 205 and leaf node 203. The class predicate comprising both of these predicates is

NOT (age < 30) AND (income = high),

where the logical operator NOT takes precedence over the logical operator AND.

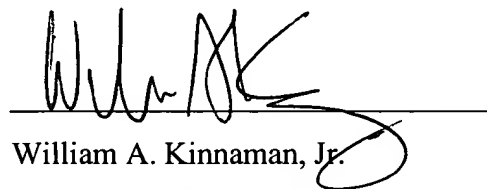
The leaf record set for leaf node 203 is simply that subset of data table records for which this class predicate evaluates to TRUE. An inspection of the data table of Fig. 1 shows that this leaf record set consists of the records with ages 42 and 70 (rows 5 and 8 of the table). By a similar process, it can be shown that the leaf record set for leaf node 202 corresponds to rows 1-3 (ages 21-29), while the leaf record set for leaf node 204 corresponds to rows 4, 6 and 7 (ages 37, 49 and 57). While the process of identifying the leaf record set associated with a particular leaf node thus takes several steps to accomplish, it is deterministic at every step and thus fully compliant with 35 U.S.C. § 112, second paragraph.

Conclusion

Reconsideration of the application as amended is respectfully requested. It is hoped that upon such consideration the Examiner will hold all claims allowable and pass the case to issue at an early date. Such action is earnestly solicited.

Respectfully submitted,
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